AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

1. (currently amended) A plant for natural gas liquids recovery in which the plant is coupled with an LNG liquefaction plant, comprising

an absorber configured to receive an absorber feed stream and a first and a second reflux stream, and further configured to provide a bottom product stream and an absorber overhead product;

a distillation column configured to receive a first portion of the bottom product stream and a second portion of the bottom product stream at different points, and wherein the distillation column is further configured to produce a distillation column overhead and to operate at a pressure that is lower than an operating pressure in the absorber;

a compressor that is configured to receive and compress the distillation column overhead to at least absorber pressure, and a conduit that is coupled to the compressor and absorber and configured to feed the compressed distillation overhead to the absorber; ~~and~~

a control unit that is configured to control [[a]] flow ratios of (a) the feed stream to the second reflux stream and (b) the first portion of the bottom product stream to the second portion of the bottom product stream, wherein the control unit is further configured to control a degree of recovery of C2 components in the distillation column bottom product stream via the flow ratios ~~is a function of desired ethane recovery in the distillation column bottom product stream~~; and

a liquefaction unit that is configured to receive the absorber overhead product and to produce LNG.

2. (original) The plant of claim 1 further comprising at least one of a heat exchanger and a reflux condenser that are configured to heat the first portion of the bottom product stream, and still further comprising an expansion device configured to cool the second portion of the bottom product stream.

3. (canceled)

4. (original) The plant of claim 1 further comprising a cooling device thermally coupled to the distillation column overhead and configured to cool the compressed distillation column overhead.

5. (original) The plant of claim 4 wherein the cooled compressed distillation column overhead is the first reflux.

6. (currently amended) The plant of claim 1 wherein the absorber is configured such that the absorber produces the absorber overhead product at ~~to produce an absorber overhead product that has~~ a temperature of equal or lower than -90 °F and a pressure of between 500 psig and 700 psig.

7. (original) The plant of claim 6 further comprising a compressor that is configured to receive the absorber overhead product and to compress the absorber overhead product to a pressure of at least 800 psig.

8. (original) The plant of claim 7 wherein the compressor is operationally coupled to an expander that expands the absorber feed stream.

9. (currently amended) A method of processing a gas for delivery to an LNG liquefaction plant, comprising:

providing an absorber that receives an absorber feed stream and a first and a second reflux stream, and that produces a bottom product stream and an absorber overhead product;

fluidly coupling the absorber to a distillation column such that a first portion of the bottom product stream and a second portion of the bottom product stream are fed to the distillation column at different points;

operating the distillation column at a pressure that is lower than an operating pressure of the absorber;

feeding a distillation column overhead product to the absorber; ~~and~~

controlling [[a]] flow ratios of (a) the feed stream to the second reflux stream and (b) the first portion of the bottom product stream to the second portion of the bottom product stream to thereby control a degree of recovery of C2 components ~~as a~~

~~function of desired ethane recovery~~ in the distillation column bottom product stream; and

feeding the absorber overhead product to a liquefaction unit to produce LNG.

10. (canceled)

11. (original) The method of claim 9 wherein the distillation column overhead product is compressed, cooled, and fed to the absorber as the first reflux stream.

12. (original) The method of claim 9 wherein the distillation column is operated at a pressure between 300 psig and 500 psig, and wherein the absorber is operated at a pressure of between 500 psig and 800 psig.

13. (original) The method of claim 9 further comprising a step of separating a cooled feed gas into a liquid portion and a vapor portion, and feeding the liquid portion after at least partial depressurization and warming into the distillation column.

14. (original) The method of claim 13 wherein the vapor portion is split into a first and second stream to thereby form the second reflux stream and the absorber feed stream.

15. (currently amended) The method of claim 9 wherein the absorber overhead product is ~~absorber produces~~ a cryogenic absorber overhead stream, and further comprising a step of compressing the cryogenic absorber overhead stream to a pressure suitable for liquefaction.

16. (original) The method of claim 15 wherein the step of compressing is driven by expansion of the absorber feed stream.

17. (currently amended) A method of variably recovering C2 from a feed gas to a LNG liquefaction plant while maintaining recovery of C3 at 95% or more, the method comprising:

feeding an expanded and heated liquid portion of a feed gas to a distillation column and feeding a vapor portion of the feed gas to an absorber that produces an absorber overhead product at a pressure of between 500 psig and 700 psig;

adjusting a flow ratio of an absorber feed to a second reflux to the absorber, and using a first reflux that is provided by a distillation column overhead product to thereby control the absorber overhead product temperature to a low temperature of equal or lower than -90 °F;

feeding the absorber overhead product at the low temperature to a compressor, and compressing the absorber overhead product to a pressure suitable for liquefaction;

adjusting a temperature of an absorber bottom product that is fed to the distillation column to thereby control a distillation column overhead temperature;

wherein the step of adjusting the flow ratio and the step of adjusting the temperature is used to control a degree of recovery of C2 components in a distillation column bottom product stream; and

operating the absorber at a higher pressure than the distillation column.

18. (original) The method of claim 17 wherein the step of adjusting the absorber bottom product temperature is performed by heating at least one portion of the absorber bottom product in a heat exchanger.

19. (currently amended) The method of claim 17 wherein the step of adjusting the absorber bottom product temperature is performed by cooling at least ~~another~~ one portion of the absorber bottom product using a JT valve.

20. (original) The method of claim 17 wherein the step of adjusting the flow ratio of the absorber feed to the second reflux to the absorber is a function of desired C2 recovery.